

Sorex bendirii. By Donald Pattie

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Sorex bendirii Merriam, 1884

Marsh Shrew

Atophyrax bendirii Merriam, 1884:217. Type locality 1 mile from Williamson River, 18 miles southeast of Fort Klamath, Klamath County, Oregon, U.S.A.

CONTEXT AND CONTENT. Order Insectivora, Family Soricidae, Subfamily Soricinae. The genus *Sorex* contains about 40 living species. Three subspecies of *Sorex bendirii* are recognized as follows:

S. b. albiventer Merriam, 1895:97. Type locality Lakeushman, Olympic Mountains, Mason Co., Washington.

S. b. bendirii (Merriam, 1884), see above.

S. b. palmeri Merriam, 1895. Type locality Astoria, Clatsop Co., Oregon.

DIAGNOSIS. The only large, velvety, fuscous-black shrew within its range (Figure 1), with underparts usually as dark as, or nearly so, as the upper parts and with a slight fringe of stiff hairs on the hind toes. On the Olympic Peninsula of Washington the underparts may be whitish. Color and hair fringe separate *S. bendirii* from the water shrew, *S. palustris*, which has a noticeable fringe of stiff hairs on the hind toes and a silvery-gray venter. These two species are the largest in the genus *Sorex* in North America (condylobasal length

averages more than 19.3 mm in both). *Sorex bendirii* has a proportionately longer rostrum, the anterior part of the premaxillary is shallower dorsoventrally than the middle part, and the vertical depth of the rostrum at the third unicuspid is less than half the distance from the anterior border of the infraorbital foramen to the posterior border of the first incisor. The protocones of M1 and of M2 usually show a distinct posterior cusplike lobe (Figure 2). *Sorex palustris* has a proportionately shorter rostrum, the anterior part of the premaxillary is scarcely shallower dorsoventrally than the middle part, and the vertical depth of the rostrum at the level of the third unicuspid is about equal to half the distance from the anterior border of the infraorbital foramen to the posterior border of the first incisor (modified from Hall and Kelson, 1959).

GENERAL CHARACTERS. Average measurements of 15 specimens of *S. b. bendirii* are total length 156 mm, tail length 70 mm, hind foot 19.2 mm, ear 8 mm, and weight 14.5 g; 14 of these specimens were captured in July and August. Average measurements of 22 specimens of *S. b. albiventer*, 16 of which were captured in July and August, are total length 156 mm, tail length 67 mm, hind foot 19.9 mm, ear 7.8 mm,

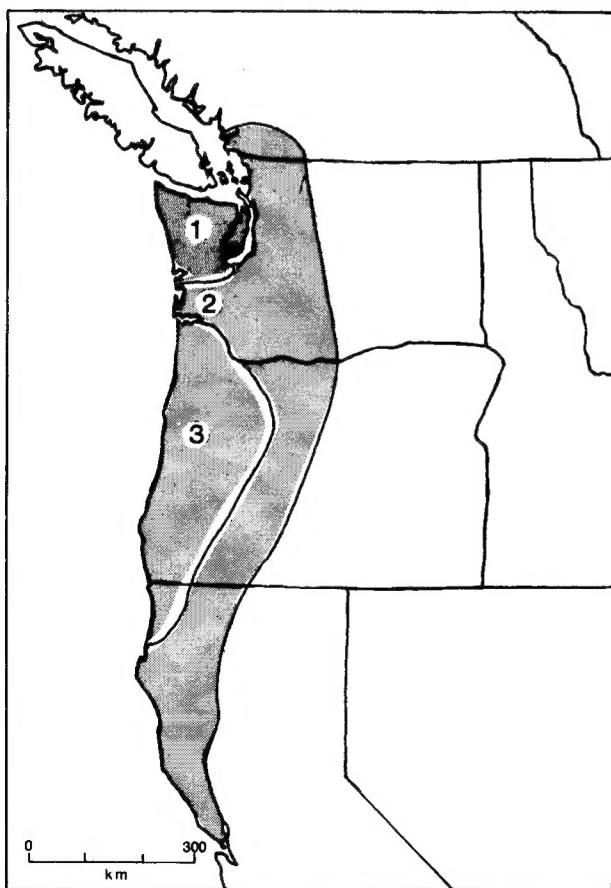


FIGURE 1. Geographic range in western North America of *Sorex bendirii* and its subspecies: 1. *S. b. albiventer*; 2. *S. b. bendirii*; 3. *S. b. palmeri*.

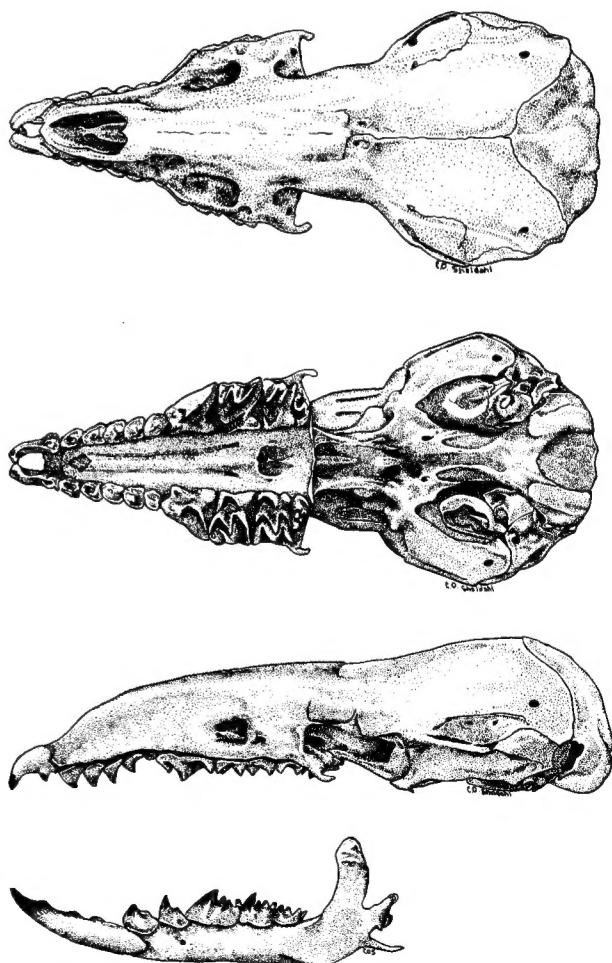


FIGURE 2. Skull of *Sorex bendirii* in (top to bottom) dorsal, ventral, and lateral view, and lateral view of mandible. Drawn by Carol Ohl Sheldahl from specimen number 895 of the author's collection.

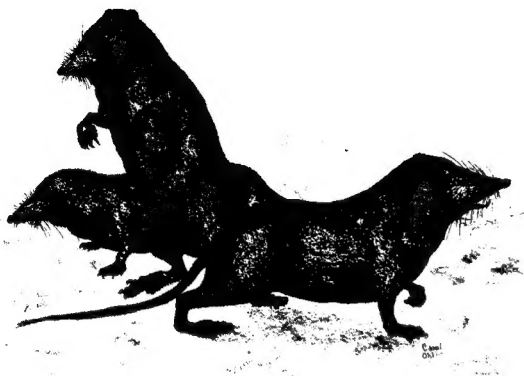


FIGURE 3. Sketches of *Sorex bendirii* in three characteristic poses. Drawn from life by Carol Ohl Sheldahl.

and weight 16.1 g. More detailed descriptions are available (Cowan and Guiguet, 1965; Dalquest, 1948; Hall and Kelson, 1959; Pattie, 1969).

DISTRIBUTION. The distribution of the subspecies of *S. bendirii* is shown in Figure 1. No fossil remains have been reported.

S. bendirii, usually found in marshy areas, also inhabits streamside environs and during winter rains may frequent moist forests up to a kilometer from running or standing water.

ECOLOGY. Preferred foods seem to be earthworms, sowbugs, spiders, centipedes, termites, and other soft-bodied arthropods that are captured above ground, and aquatic arthropods captured under water (Pattie, 1969). Submerged prey is found by use of the highly mobile snout, vibrissae, and lips,

shown in Figure 3. Air trapped in the fur gives the shrews buoyancy underwater and provides a silvery appearance (Svihla, 1934).

BEHAVIOR. Locomotion in water (Pattie, 1969) includes the ability to run on top of the water for 3 to 5 seconds, to scull on the surface like whirligig beetles, and to submerge easily. Terrestrial locomotion results from a pattern of limb movement in which a forelimb and opposite hind limb are moved forward at the same time. Eating takes place out of the water. Chemical communication is suggested by the penetrating scent, which also characterizes other members of the genus. Eyesight, as in all shrews, is notoriously poor. Pattie (1969) found vocal communication to be associated with displacement of an individual and with scuffling with cage mates.

LITERATURE CITED

- Cowan, I. M., and C. J. Guiguet. 1965. The mammals of British Columbia. British Columbia Prov. Mus. Handbook 11:1-414.
- Dalquest, W. W. 1948. Mammals of Washington. Univ. Kansas Publ., Mus. Nat. Hist. 2:1-444.
- Hall, E. R., and K. R. Kelson. 1959. The mammals of North America. Ronald Press Co., New York, vol. 1, xxx + 1-546 + 79 pp.
- Merriam, C. H. 1884. Description of a new genus and species of the Soricidae. Trans. Linnaean Soc. New York 2:217-225.
- 1895. Synopsis of the American shrews of the genus *Sorex*. N. Amer. Fauna 10:57-100.
- Pattie, D. L. 1969. Behavior of captive marsh shrews (*Sorex bendirii*). Murrelet 50(3):27-32.
- Svihla, A. 1934. The mountain water shrew (*Sorex palustris navigator*). Murrelet 15:44-45.

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